

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please cancel claims 6-8 without prejudice or disclaimer.

Please amend claims 1, 3, and 5 and add new claims 9-17 as follows:

1. (Currently Amended) A magnetic sensor comprising:

a substrate which has at least one insulating main surface;

at least two serially connected magnetoresistive devices, formed on the insulating main surface, each of which includes at least one magnetic tunnel junction device;

an organic film, which is for relieving thermal stress and formed to cover one of the magnetoresistive devices through an insulating film for passivation; and

a magnetic shield layer, which is formed to cover the one of the magnetoresistive device devices covered by the organic film through the organic film and the insulating film.

2. (Original) The magnetic sensor according to Claim 1, further comprising:

another organic film formed on the organic film to cover the magnetic shield layer.

3. (Currently Amended) A magnetic sensor comprising:

a substrate which has at least one insulating main surface made of silicon;

at least two serially connected magnetoresistive devices, formed on the insulating main surface, each of which includes at least one magnetic tunnel junction device; and

a magnetic shield layer, which is formed to cover one of the two magnetoresistive devices through an insulating film for passivation and made of a nickel-iron alloy having a nickel content of 69% or less.

4. (Original) The magnetic sensor according to Claim 3, wherein the magnetic shield layer is formed on the insulating film through an organic film for relieving thermal stress.

5. (Currently Amended) The magnetic sensor according to any one of Claims 1 to 4, wherein the magnetic shield layer has no undercut along the bottom of each of its side walls.

Claims 6.-8. (Canceled)

9. (New) The magnetic sensor according to Claim 1, further comprising a wiring layer provided between the magnetoresistive devices and the insulating film.

10. (New) The magnetic sensor according to Claim 1, wherein the substrate is made of silicon.

11. (New) The magnetic sensor according to Claim 1, wherein the substrate includes another surface fixed to a lead frame through an Ag paste layer.

12. (New) The magnetic sensor according to Claim 1, wherein the magnetic shield layer is made of a nickel-iron alloy having a nickel content of 69% or less.

13. (New) The magnetic sensor according to Claim 1, wherein the organic film is about 0.5-1.0 μm in thickness.

14. (New) The magnetic sensor according to Claim 3, further comprising a bonding pad located on the substrate between the at least two serially connected magnetoresistive devices.

15. (New) The magnetic sensor according to Claim 3, wherein another surface of the substrate is fixed to a lead frame through an Ag paste layer.

16. (New) The magnetic sensor according to Claim 4, wherein the organic film is about 0.5-1.0 μm in thickness.

17. (New) A magnetic sensor comprising:

a substrate including an insulating layer formed thereon;

at least two magnetoresistive devices formed on the substrate and
connected through the insulating layer by a wiring layer;

an organic film formed on the insulating film for relieving thermal stress;

and

a magnetic shield layer formed on top of at least one of the
magnetoresistive devices.